Every week: your best buy for software and listing reviews

Home Computing WEEKLY

An Argus Specialist Publication
No. 76
Aug 21-27, 1984
45p

WIN
two new adventures from Temptation Software

Software reviews for:
Spectrum, BBC, Commodore 64, Dragon, Atari, Tandy, Texas, Electron

Spectrum
How to convert VIC-20 games for your micro

Commodore 64
Two programs to type in

Oric/Atmos
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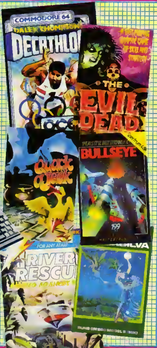
PLUS
news, your letters, software charts...



Sexy software slammed

Parents must shield their children from sexy software, warns the National Viewers' and Listeners' Association

This statement follows the introduction of a game called Strip Poker from U S Gold, in which the young ladies depicted on screen can eventually end up naked

A spokesman for the NVLA said: "Until there is an effective obscenities law, nothing can be done about this type of software coming onto the market

"We know of this game, and several others like it But unfortunately there is very little we can do about them All we can do is advise parents to keep a keen eye on the software their children are buying"

"Let's face it, children are likely to see much worse by simply picking up their father's daily paper Another thing that

Continued on page 5

Going for gold

Close on the heels of Daley Thompson's gold medal in the Olympics comes a new game from Ocean called Daley Thompson's Decathlon

Available for the Commodore 64 and the 48K Spectrum, the game recreates the 10 decathlon events — all of which are played under Olympic qualifying standards

Royalties from the game will go to the British Amateur Athletic Board, and a free poster is included with every copy of the game

To play the game one player takes on the role of Daley Thompson competing against the computer (Spectrum version), but in the Commodore version two people can play

Micros equipped with speech units will give vocal scores, and a voice saying "on your marks, get set, go"

David Ward, managing director of Ocean, said "When Daley tried the 100m sprint, he became quite agitated because

Continued on page 5

The Journey. It makes every other adventure look like Snakes and Ladders.

ZX SPECTRUM 48K
THE JOURNEY
Temptation

Temptation

[illegible] SPECTRUM 48K. FROM [illegible] PRISM, [illegible] AND LEADING SOFTWARE [illegible] OR PHONE [illegible]

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Home Computing WEEKLY

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THE ADVENTURE
OUT SOON
FROM Temptation

REGULARS

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A selection of new games for the TI, Dragon, Tandy and Atari

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...for the Electron, Commodore 64, Spectrum and BBC

Softwars houses: send your software for review to the editor at the address below. And contact him for competitions and other promotions, too

HOME COMPUTING
WEEKLY
BRITAIN'S BRIGHTEST

PROGRAMS

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No.2 **LATEST NEWS**

QUICKSILVA Computing SECTION

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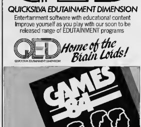

an Olympiad spectacular from Software STUDIOS

GAMES 64
48K Spectrum £9 95

Limited Gold Medal Medallion edition contains 7 certificates full instructions and background information

Selected titles available at: WHSMITH Boots WOOLWORTH John Menzies and leading multiple retailers and specialist computer stores.

CHART ACTION

QUICKSILVA TOP 20 JUNE 1984

	NAME	MACHINE	PRIC
1	Trashman*	– CBM 64 –	£79
2	Fred	– 48K Spec –	£79
3	Ant Attack	– 48K Spec –	£69
4	Boogaboo	– CBM 64 –	£79
5	The Snowman	– 48K Spec –	£69
6	Mined Out	– Electron –	£69
7	Gatecrasher*	– 48K Spec –	£69
8	Sting 64	– CBM 64 –	£79
9	Bugaboo	– 48 Spec –	£69
10	Dragonsbane	– 48K Spec –	£69
11	Escape*	– CBM 64 –	£79
12	Aquaplane	– CBM 64 –	£79
13	Gatecrasher*	– BBC B –	£69
14	Gatecrasher*	– Electron –	£69
15	Veinor's lair*	– Oric/Atmos –	£69
16	Mined Out*	– Oric/Atmos –	£69
17	Ultisynth	– CBM 64 –	£149
18	Drum Kit*	– BBC B –	£149
19	Tornado	– Vic 20 –	£59
20	Quintic Warrior	– CBM 64 –	£79

*New Release

ORIC ATMOS GAMES SPECTACULAR! Veinor's Lair £69 Mined Out £69

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COMING SOON

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GSH

WARNING. These programs are sold according to QUICKSILVA Ltd's terms of trade and conditions of sale, copies of which are available on request.

From front page

has to be taken into consideration is that the poker game is a game of skill, and the children will have to be good poker players before they start winning''

There is also a safety device built-in to the program According to Jenny Richards, ''If parents are playing this game and one of the children suddenly walks into the room, a simple press of a key will take the lady off the screen — leaving only the cards dealt on show

From front page

he could not run any faster But he soon relaxed when I explained he was competing against himself''

Cost of the game is £6 90 for the Spectrum, and £7 90 for the CBM 64

Ocean Software, 6 Central Street, Manchester M25NS

OU pack for Spectrum users

The Open University has made its Micros in Schools microcomputer 'Awareness Pack' available for the Sinclair 48K Spectrum to enable parents — as well as teachers — to understand the many ways in which children can benefit from the use of computers in the classroom

The pack is designed for computing 'novices' It brings them to the point where they can connect up, switch on and use educational material on the microcomputer, evaluate its educational potential and understand enough computer jargon to communicate with computer experts

A total of 13 educational case studies and five samples of schools software are included in the pack, together with step-by-step instructions for loading and use

The programs come on cassette but can also be used with Microdrives

Open University, Milton Keynes MK7 6AA

Spectrum in new catalogue

Electronics feature largely in Argos' Autumn/Winter catalogue which sees the introduction to the firm's stock range of Sinclair's ZX Spectrum, together with an extended range of electronic typewriters — some with a computer interface facility

Joining the Commodore 64 and Atari's XL machine, the Spectrum will be sold by Argos at a price of £129 95

A selection of peripheral equipment and software is also available for each machine

This includes the ZX Interface 1, at a price of £49 95, and a teach-yourself package on BASIC programming for the Commodore 64 at £14 95

Argos Distributors, 112 Station Road, Edgware, Middx HA8 7AQ

Award goes to Acorn

The Queen's Award for Technological Achievement was officially presented to Acorn recently (for the BBC Micro), by Sir Peter Proby, the Lord Lieutenant of Cambridgeshire

Christopher Curry, managing director (left), and Hermann Hauser, chairman (right), are seen here with the award at the presentation reception

Acorn Computers, Fulham Road, Cherry Hinton, Cambridge CB1 4JN

Price cuts for software

From August 31, all Comsoft software will be reduced in price to £4 95

New software to be introduced, also for the BBC Micro and Acorn Electron, will also be retailed at this new price

Comsoft Computer Software, 7 Roman Drive, Leeds, West Yorkshire LS8 2DR

Sponsorship for heat of competition

In collaboration with Thames Polytechnic, Commodore is this year sponsoring the first European heat of the Association for Computing Machinery's International Programming Competition

The contest will take place at Thames Polytechnic, London, on Saturday October 20 and two winning teams will be chosen to represent the European region at the final in New Orleans next March

Teams will consist of up to four undergraduate or post-graduate students, who will each be set six programming 'problems' The team which solves them in the shortest possible time will be declared the winners

Competitors will be permitted to program solutions in either Pascal or Fortran, using Commodore 8000 computers linked by means of a Cortex Intercomm communications interface to a local mini-computer network

Commodore, 675 Ajax Ave, Slough, Berks SL1 4BG

American software for UK

High quality American programs are to be produced under licence from leading US sources, by a new British company — Statesoft

Initial releases from the company will include Astro Chase and Flip & Flop

All Statesoft Commodore 64 products will have the bonus of a British derived fast-loading system, and it is claimed that this will give the Commodore 64's cassette player better loading times than its disk drive can achieve

The company will not, however, be ignoring 1541 owners — the cassette versions available to the public at a retail price of £8 95 will soon be caught up by the disc option priced at £10 95

Statesoft, Bessemer Drive, Stevenage, Herts SG1 2DX

First step into UK market

While Brother has been manufacturing for many years impact dot matrix printers, the launch of the M1009 and M2024 marks the direct entry of the company into the UK market for impact dot matrix printers

For the home computer user, the M1009 printer is priced at under £200 — bringing it within the reach of many home users

Using a nine pin head, the machine gives crisp, clear characters with true descenders

As well as the full 96 character ASCII character set, the M1009 also has a graphics set and international characters

Standard interface on the M1009 is parallel (Centronics), while a dual interface (RS232 and Centronics) will be available shortly

Print speed is at 50 characters per second on normal characters In addition to normal character size (80 columns, 10 characters per inch) the M1009 will also print in an expanded face (40 columns, 5 cpi) or condensed face (132 columns)

The unit will accept paper up to 10in in width which can be sheet fed using friction feed, roll fed using an optional roll holder, or fan fold using an optional pin feed unit An original, plus two copies, can be printed at one time

This machine is mains-powered, measures 333mm by 191mm by 70mm and weighs 3kg

Also new from Brother is the M2024, which combines Near Letter Quality print and 160 character per second draft print

Mainly for business use, this machine has a 24-pin impact dot matrix print head, while speed is provided by logic seeking bi-directional printing

Brother Office Equipment Division, Shepley Street, Guide Bridge, Audenshaw, Manchester M34 5JD

Brother's M1009 dot matrix printer

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HCW 21/8/84

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SNEAK PREVIEW

The conventional joystick is dead.

On August 22nd Cheetah Marketing will unveil its successor.

Are you ready for the age of the R.A.T.?

Take a journey with a prize from temptation

An adventure with the Black Warlock, his guardians, and warriors is one of the prizes awaiting the winners of this week's competition

This is your chance to win The Journey and Admiral Graf Spee — two great games from Temptation Software.

A total of 75 prize winners will each receive a copy of The Journey for the Spectrum, together with Admiral Graf Spee for the Spectrum, Commodore or Amstrad

The Journey is an adventure game that finds you in the lands of the Black Warlock. The Guardians to the Black Warlock are an unfriendly lot so beware. They will make your life very difficult as you trek Northward to seek out the White Ship of the Elves

Both the Guardians and various unfriendly people have to be destroyed for you to make your way further

Some form of help may come from the elf, the warrior and the wizard — but be warned, they do have a mind of their own so you may not get the help you expect

Throughout the game you will also be given coded messages, and speed is of the essence to work-out what these messages mean. Failure to come up with a quick response results in death

When you have finished in the land of make believe, you can start to battle it out in the sea with the other game — Admiral Graf Spee

You play the part of the Captain of the German battle ship the Admiral Graf Spee, and your task is to destroy as many of the enemy ships as possible

This game starts off with a map of the South Atlantic, showing your position and the position of the enemy. You steer towards the enemy, and when you start coming close to an enemy ship the screen changes from a map to 'battle mode.

The 'battle mode' gives you a full picture of the horizon with the ship you have to attack in position. You will be fighting both battle ships (which fire), and merchant vessels (which don't)

Both types of ship can, of course, move — so you can expect to spend some time chasing the enemy around the South Atlantic

Two great games that are really worth winning, so start counting the differences in the two cartoons and get your entries sent away. Good luck

How to enter

Study the two cartoons — there are a number of differences between them. Circle the differences on cartoon B and seal the cartoon and coupon in an envelope. Write clearly the number of differences you found on the back of the envelope

Post your entry to Temptation Competition, Home Computing Weekly, No 1 Golden Square, London W1R 3AB. Entries close at first post on Friday September 7, 1984

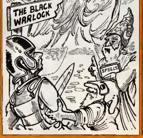
You may enter as many times as you wish, but each entry must be on an official coupon — not a copy — and sealed in a separate envelope

Important, please follow carefully the guidelines on entering — incomplete coupons and entries in envelopes with no numbers on the back cannot be considered. If you are a winner, the coupon will be used as a label to send your prize so clear writing is essential

The rules

Entries will not be accepted from employees of Argus Specialist Publications, Temptation and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies

The How to Enter section forms part of the rules



Temptation Competition

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Number of differences found ______________

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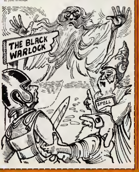
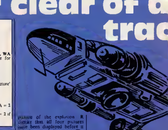


Steer clear of a trac



You may be an old hand at mass battles — but can you manoeuvre your spaceship accurately to dock with the space station, judging the precise moment to move in? If you get it wrong, both you and the space station go up in flames.

You have 19 screens on which to avoid asteroids. Your shields can only take another 50 collisions. If you exceed this, you explode instantly and spectacularly.

At first it may seem all too easy. There are just 10 asteroids to get past. But by the end there are around 80 — and they're all endangering your mission.

When you reach screen 20 you come face to face with the toughest challenge of all — the spaceshot station Nimbus. If you successfully dock with this you will be able to escape from this hostile section of space.

This is really tricky — the Nimbus is constantly being bombarded by dust particles and is continually switching its powerful shields on and off. You have to perfect your timing. You should only dock when the station's shields are off — otherwise you'll end up as a ball of flames!

Press cursor down for up, cursor left for down, F for thrust and space bar to level the ship up.

Spaceshot Nimbus
How it works

2-20	set variables, read in sprite data and GOSUB titles
22-28	set up screen and obstacles
30-60	main game, move ship get instructions from keyboard, GOSUB sound etc
70	routine to update score and collisions
80-92	collision warning routine
100-150	sound routines
200-280	titles and demo
300	check if screen 20, if not then return
302-328	if screen 20, position Nimbus. Move ship, get keyboard instructions, change Nimbus and check if docking is successful
350	if docking is good, place shuttle into Nimbus, GOSUB victory sound, add 1000 to points
358-368	display score, ask if player wants to go again
400-456	explosion routine, noise
1079 2044	sprite data

Only use thrust when your way ahead is clear. You begin the game with 100 points, and this increases by 100 whenever you complete a screen. Each time you collide you lose 10 points and your collision register goes up by 1. When the collision register equals more than 40 you get a flashing collision warning — if you reach the end of that screen. The number of asteroids increases by four with each screen.

Spaceshot Nimbus

V	video chip
VO	volume
AT	attack
SU	sustain
WA	waveform
HF	high frequency
AT+14, SU+14, AT+14, WA+14, HF+14	as above for voice three
P	points
Q	screen number
E	value for engine sound
NH	number of obstacles
MB	number of first 'picture' for explosion routine
Y	Y pos of ship
X	X pos of ship
G	X pos with thrust
A	A = 0 if ship on left X. A = 2 when on right X pos
B	B = 0 if no thrust. B = 2 if thrust is engaged
Co	number of collisions

Spaceshot Nimbus
Hints on conversion

This game relies heavily on the 64's sprites — especially the collision detect. It is possible to write this without all the frills in which case it becomes a game where you have to avoid the obstacles as you travel from left to right on the screen.

Here's how to cheat if you can't make it to the last screen however hard you try: press RUN/STOP on screen 1, then press CLR/HOME. Type Q = 18, press Return then type CONT.

The ship flies across the screen unhindered and the next screen will be number 19 but will only have as many asteroids as screen 2. Once you've negotiated this screen you'll move on to 20 where you can have a crack at the Nimbus.

Only cheat when you've tried it the hard way. Perserverance is good for the soul!

The routine for moving the ship on screen 20, lines 302-328, is used so that the main loop isn't slowed down by continuous IF Q = 20 THEN. Also on the final screen you don't have the facility to use space, as this is no longer necessary.

You may wish to use the explosion routine at lines 400-456. MB is the first sprite picture of the explosion. R checks that all four pictures have been displayed before it lets the sound die away. The sprite data for the explosions is clearly marked.

Darts Scoreboard

Don't be misled — Darts Scoreboard isn't a game which plays darts for you. It's simply a useful addition to any darts match. It monitors the score and gives you all a detailed output of your play, saving you from scribbling on bits of paper in an effort to keep track of the score when you should be concentrating on your game.

The program will first ask you for the score you wish to try for. The usual is 501 but some people prefer 101 or even 1001. You may choose anything from 101 to 1001.

Next you will be asked for your names. Use first names, surnames or nicknames. But remember, anything over 10 letters won't be displayed in full. This is so that it fits on the board neatly.

The program will then show you the score in legs — initially 0 0. Then the board will be displayed.

Variables

X$	1 for player 1, 2 for player 2
N$(X)	names
TB(X)	points left from score ☐
PS(X)	points scored
TH(X)	number of throws
AV(X)	average per throw
AD(X)	average per dart
HS(X)	highest score
LS(X)	lowest score
DB(X)	doubles needed
SC(X)	used to enter score
TB	score set at start
VO, AT, SU, WA, HF	sound variables

Darts Scoreboard
How it works

6	clear sound channels
7-12	set variables
14-26	get score wanted and names
28-110	set up board on screen
112-120	get data from players during game
120-138	transfer data into figures for board and reprint board
200-270	sound routines
300-310	win sequence, ask if another go?
400-490	print legs, check for winner

Board

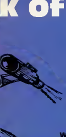
Name	your names
Points left	how many points you each have remaining from the figure chosen at the start
Points scored	how many points you have scored altogether
Throws	how many throws you have each had
Average	this is your average score per throw
Average per dart	this is your average score for each dart
Highest	your highest score
Lowest	your lowest score, initially 180
Doubles	this tells you if you need any doubles if below 41

To enter data press 1 for player 1, 2 for player 2.

Enter your score then press return. Any score over 180 will get a SCORE TOO HIGH error. Anything less than 0 or anything that will leave you less than 2 will receive similar results.

The program has many traps

steroids — keep k of darts scores



Dart Scoreboard
Hints on conversion

POKE 53280 and 53281 control border and screen colours. Sound commands may be replaced with your own or ignored. You may need to replace Left (string) with PRINT AT or whatever your computer uses. The board is printed directly on to the screen and if you want to try this on your own machine you should experiment to achieve the best looking board. The rest of the program should be fairly standard to most BASIC users and some parts can be typed in directly with no conversion

for anyone determined to mess about but the success of the program depends upon the seriousness of the user. All scores entered as fractions — say 26 63574 will be converted to an integer value.

If you do press 1 or 2 by mistake, type -1. You'll get a 'SCORE TOO LOW' error but it won't affect your scoring average.

Similarly, if you can see a number is higher than you need don't enter it. It will be rejected anyway as these tend not to give an accurate scoring average.

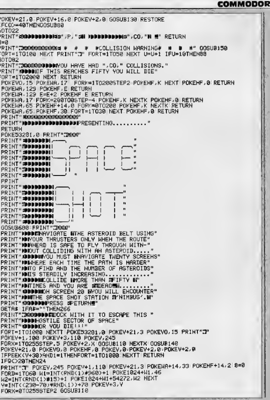
The one problem is if you enter a wrong value which fits. You will then have to start again so accurate data entry is essential for a good game without any hitches. The program plays the normal 'the first to win three legs wins the match' and simple noises accompany this victory.

The doubles display will tell you if you need a double if your POINTS LEFT is 40 or below. It won't — unfortunately — tell you when you need a BULLS-EYE but this should be easier for you to notice.

Here's a bonus — two completely different programs from the same author, Andrew Clarke. Whether you're an arcade fanatic or a darts demon, you'll find something to intrigue you here

Listing for Spaceshot Nimbus

```
0 REM*****SPACESHOT NIMBUS**********
1 REM******BY ANDY CLARKE (C) 1984****
2 PRINT"J":POKE53280,0:POKE53281,2:GOSUB200
4 FORC=1TO19:READW:NEXT
5 FORD=220TO227:FORS=0TO62:READW:POKED*64+S,W:NEXTS,D
8 DIMT(100):DIMH(960)
10 FORC=54272TO54296:POKEC,0:NEXT
12 V=53248:AT=54277:VO=54296:WA=54276:NF=54273:SU=54270
14 POKEAT,32:POKESU,255:POKEAT+14,32:POKESU+14,255
16 POKEWA,17:POKEWA+14,129:POKEV+39,5:POKEV+40,7:POKEV+23,1:POKEV+29,1
18 POKE2040,220:POKE2041,223:POKEV+21,0
20 P=100:Q=1:E=5:NH=10:MB=224:GOSUB206
22 E=5:PRINT"J▮▮▮",Q,"▮▮▮SCORE▮▮▮▮▮▮▮COLLISIONS":POKEV+21,2:GOTO300
24 FORT=1TONH:H(T)=INT(RND(1)*960)+1
26 POKE1064+H(T),90:POKE55336+H(T),1:NEXTT:GOSUB70
28 POKEV+16,0:POKEV+31,0:POKEV+30,0:POKEV+2,0:POKEVO,15
29 A=0:B=0:NH=NH+4
30 Y=INT((230-70)*RND(1))+70:POKEV+3,Y
32 FORX=0TO255STEP2:GOSUB110
34 IFX>=253THENPOKEV+16,2:A=2:X=256:FORX=1TO91STEP2:GOSUB110
36 KB=PEEK(197):IFKB=64THEN46
38 IFKB=2ANDY<231THENY=Y+3:POKE2041,222:POKEV+3,Y
39 IFKB=7ANDY>69THENY=Y-3:POKE2041,223:POKEV+3,Y
40 IFKB=60THENPOKE2041,223
42 IFKB=21THENB=2:FORG=XTO255STEP8:X=0:GOSUB120:POKE2041,223
43 IFG>=246THENPOKEV+16,2:A=2:FORG=1TO91STEP8:GOSUB120
44 IFB=2ANDA=2THENFORG=GTO91STEP8:X=0:GOSUB120
46 IFPEEK(V+31)AND2=2THENP=P-10:CO=CO+1:GOSUB100:GOSUB70
48 IFCO=50THEN400
50 IFB<>2THENPOKEV+2,X:NEXTX:P=P+100:Q=Q+1
52 IFB=2THENPOKEV+2,G:NEXTG:P=P+100:Q=Q+1
```



```
54 POKEV+21,0 POKEV+16,0 POKEV+2,0 GOSUB130 RESTORE
58 IFCO>=40THENGOSUB80
60 GOTO22
70 PRINT"■▶▶▶▶▶▶▶▶▶▶■",P,"■■ ▶▶▶▶▶▶▶▶▶▶■",CO,"■ ■" RETURN
80 U=0
82 PRINT"■■■■■■■■■■■ *  *  *  *COLLISION WARNING*  *  *  *" GOSUB150
84 FORT=1TO100 NEXT PRINT"■" FORT=1TO50 NEXT U=U+1 IFU=10THEN88
86 GOTO82
88 PRINT"■■■■■■■▶▶▶▶YOU HAVE HAD ",CO," COLLISIONS."
90 PRINT"■▶▶▶▶IF THIS REACHES FIFTY YOU WILL DIE"
92 FORT=1TO2000 NEXT RETURN
100 POKEVO,15 POKEWA,17  FORK=1TO200STEP2 POKEHF,K NEXT POKEHF,0 RETURN
110 POKEWA,129 POKEHF,E RETURN
120 POKEWA,129 E=E+2 POKEHF E RETURN
130 POKEWA,17 FORK=200TO0STEP-4 POKEHF,K NEXTK POKEHF,0 RETURN
140 POKEWA,65 POKEHF+14,0 FORK=0TO200 POKEHF,K NEXTK RETURN
150 POKEWA,65 POKEHF,30 FORT=1TO30 NEXT POKEHF,0 RETURN
200 PRINT"■■■■■■■■■■■■■■■■■■■"
202 PRINT"▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶PRESENTING.........."
204 RETURN
206 POKE53281,0 PRINT"■■■■"
208 PRINT"■▶▶▶▶▶▶▶▶"
210 PRINT"■▶▶▶▶▶▶▶▶"
212 PRINT"■▶▶▶▶▶▶▶▶"
214 PRINT"■▶▶▶▶▶▶▶▶"
216 PRINT"■▶▶▶▶▶▶▶▶"
218 PRINT"■▶▶▶▶▶▶▶▶"
220 PRINT"■▶▶▶▶▶▶▶▶"
222 PRINT
224 PRINT"■▶▶▶▶▶▶▶▶▶"
226 PRINT"■▶▶▶▶▶▶▶▶▶"
228 PRINT"■▶▶▶▶▶▶▶▶▶"
230 PRINT"■▶▶▶▶▶▶▶▶▶"
232 PRINT"■▶▶▶▶▶▶▶▶▶"
234 PRINT"■▶▶▶▶▶▶▶▶▶"
236 PRINT"■▶▶▶▶▶▶▶▶▶"
238 GOSUB600 PRINT"■■■■"
240 PRINT"▶▶▶▶■NAVIGATE ■THE ASTEROID BELT USING"
242 PRINT"▶▶YOUR THRUSTERS ONLY WHEN THE ROUTE"
244 PRINT"▶▶AHEAD IS SAFE TO FLY THROUGH WITH-"
246 PRINT"▶▶OUT COLLIDING WITH AN ASTEROID....."
248 PRINT"■▶▶▶▶■YOU MUST ■NAVIGATE TWENTY SCREENS"
250 PRINT"▶▶WHERE EACH TIME THE PATH IS HARDER"
252 PRINT"▶▶TO FIND AND THE NUMBER OF ASTEROIDS"
254 PRINT"▶▶IS STEADILY INCREASING............."
256 PRINT"■▶▶▶▶■COLLIDE ■MORE THAN ■FIFTY ■"
258 PRINT"▶▶TIMES AND YOU ARE ■■DEAD■■........."
260 PRINT"■▶▶▶▶■ON SCREEN 20 ■YOU WILL ENCOUNTER"
262 PRINT"▶▶■THE SPACE SHOT STATION ■'NIMBUS'.■"
264 PRINT"■▶▶▶▶▶PRESS ■RETURN■"
266 GETA$ IFA$=""THEN266
268 PRINT"■■■■■▶▶▶■DOCK WITH IT TO ESCAPE THIS "
269 PRINT"▶▶▶▶HOSTILE SECTOR OF SPACE"
270 PRINT"■▶▶▶▶OR YOU DIE!!!"
272 FORT=1TO1000 NEXTT POKE53281,0 POKEV+21,3 POKEVO,15 PRINT"■"
274 POKEV+1,100 POKEV+3,110 POKEV,245
276 FORX=1TO255STEP.5 POKEV+2,X GOSUB110 NEXTX GOSUB140
278 POKEV+21,0 POKEVO,0 POKEHF,0 POKEV,0 POKEV+2,0 POKEV+2,0
280 IFPEEK(V+30)AND1=1THENFORT=1TO1000 NEXTT RETURN
300 IFQ<>20THEN24
302 PRINT"■" POKEV,245 POKEV+1,110 POKEV+21,3 POKEWA+14,33 POKEHF+14,2 8=0
303 FORD=1TO60 W1=INT(RND(1)*960)+1 POKE1024+W1,46
304 W2=INT(RND(1)*15)+1 POKE1024+W1+54272,W2 NEXT
306 Y=INT((230-70)*RND(1))+70 POKEV+3,Y
310 FORX=0TO255STEP2 GOSUB110
```

```
312 IFX>=253THEN400
314 KB=PEEK(197) IFKB=64THEN322
316 IFKB=2ANDY<231THENY=Y+3 POKE2041,222 POKEV+3,Y
318 IFKB=7ANDY>69THENY=Y-3 POKE2041,223 POKEV+3,Y
320 IFKB=21THENB=2 FORG=XTO255STEP8 X=0 GOSUB120 POKE2041,223
322 Z=INT((221-219)*RND(1))+220 POKE2040,Z
323 IFPEEK(2040)=221AND(PEEK(V+30)AND2=2)THEN400
324 IFPEEK(2040)=220AND(PEEK(V+30)AND2=2)THEN350
325 IFG>246THEN400
326 IFB=0THENPOKEV+2,X NEXTX
328 IFB=2THENPOKEV+2,G NEXTG
350 POKEV+2,255 PRINT"J" GOSUB140 POKEV0,0 P=P+1000
358 POKEV0,0 POKEHF,0 POKEHF+14,0 POKE53281,2 PRINT"J■■■■■YOUR SCORE IS ■",P
360 PRINT"■■■■■■■ANOTHER GO? (Y/N)"
362 GETA$ IFA$=""THEN362
364 IFA$="Y"THENPOKEV+21,0 POKEV+16,0 POKEV+4,0 CLR RUN8
366 IFA$="N"THEN PRINT"■■■■■■■BYE BYE!!" END
368 IFA$<>"Y"ANDA$<>"N"THEN362
400 POKE2041,MB POKE2040,MB POKEV+29,3 POKEV+39,1 POKEV+40,1 GOSUB450
402 FORT=1TO40 NEXTT
404 MB=MB+1 IFMB>227THEN358
406 GOTO400
450 POKEWA,129 POKEWA+14,129
451 R=R+1 POKEHF,1 POKEHF+14,2 IFR=4THENPOKEHF+14,5 POKEHF,4
452 X=15 IFR=4THENFORX=15TO0STEP-.1
454 POKEVO,X IFR=4THENNEXTX
456 RETURN
600 POKEVO,15 POKEWA,65 POKEHF+2,0 POKEHF+1,0 RESTORE
602 FORC=1TO19 READW
604 POKEHF,W
606 FORT=1TO170 NEXT NEXT
608 POKEVO,0 POKEWA,17 RETURN
1049 REM***TUNE
1050 DATA10,10,10,13,13,15,17,15,15,21,21,25,28,29,25,29,28,28,0
1079 REM***NIMBUS #1   220
1080 DATA224,255,7,67,153,194,39,0,228,30,0,120,12,0,48,184,0,29,240,0,15,0,0,0
1082 DATA0,0,14,227,238,168,170,170,174,170,46,226,0,0,14,0,0,0,248,0,31,156,0
1084 DATA57,14,0,112,27,0,216,35,129,196,65,219,130,224,255,15
1999 REM****NIMBUS #2*****  221
2000 DATA112,255,14,35,187,196,39,170,228,30,170,240,14,170,176,58,170,188,242
2002 DATA170,175,146,170,165,146,170,165,146,170,165,146,170,165,146,170,165
2004 DATA146,170,165,146,170,165,250,170,191,30,170,184,14,170,240,27,170,216
2006 DATA19,171,200,17,255,136,120,255,30
2011 REM****SHIP DATA #1*** 222
2012 DATA15,128,0,129,192,0,192,224,0,224,224,56,240,184,60,88,222,130,76,239
2014 DATA1,79,255,199,79,255,255,76,238,248,88,220,96,240,184,0,224,224,0,192
2016 DATA224,0,129,192,0,15,128,0,0,0,0,0,0,0,0,8,0,0,0,0,0,0,0
2017 REM****SNIP DATA #2*** 223
2018 DATA0,0,0,128,0,0,192,0,0,224,0,0,112,0,56,120,0,68,92,0,130,78,121,1
2020 DATA79,255,207,79,255,255,78,236,120,92,184,32,120,240,0,115,224,0,224,0
2022 DATA0,192,0,0,128,0,0,0,0,0,0,0,0,0,0,0,0,0,0
2023 REM****EXPLOSION #1****** 224
2024 DATA4,2,0,66,4,8,33,8,16,16,0,32,2,34,0,33,36,16,16,168,32,8,112,64
2026 DATA3,255,0,8,112,64,16,168,32,33,36,16,2,34,0,16,0,32,32,0,16,65,2,8
2028 DATA2,1,0,4,0,120,0,0,0,0,0,0,0,0,0
2029 REM****EXPLOSION #2****** 225
2030 DATA129,0,17,64,0,2,32,16,4,16,0,8,8,129,16,120,66,0,8,36,16,4,0,32,2,68
2032 DATA66,1,0,128,136,0,16,1,0,128,2,16,64,4,68,34,0,130,16,129,17,0,8,0,16
2034 DATA16,0,8,40,64,68,64,0,2,128,4,1
2035 REM****EXPLOSION #3****** 226
2036 DATA4,16,0,0,0,0,0,0,0,4,0,0,0,1,1,0,0,0,128,132,0,0,0,16,0,0,0,0,0,0,0,1
2038 DATA0,4,32,1,0,0,0,0,4,0,0,0,0,120,0,16,0,128,0,0,0,1,0,0,0,0,0,0,128,129
2040 DATA4
2041 REM****EXPLOSION #4****** 227
2042 DATA0,8,2,0,0,0,0,0,0,8,0,16,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
2044 DATA0,0,0,32,0,0,0,0,0,0,0,0,2,0,0,0,0,0,0,0,0,0,0,0,0,0,128,0,16
```

Listing for Darts scoreboard

```
0 REM**********************
1 REM** DARTS SCOREBOARD **
2 REM**        BY        **
3 REM** ANDY CLARKE      **
4 REM**                  **
5 REM**********************
6 FORC=54272TO54296:POKEC,0:NEXT:GOSUB200
7 FORX=1TO2
8 AV(X)=0:AD(X)=0:TH(X)=0:NS(X)=0
9 TB(X)=0:PS(X)=0:LS(X)=100:LE(X)=0:NEXT
10 POKE53281,0:POKE53280,0
12 D$="▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼":E$="▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶"
14 INPUT"♥▼▼▶▶▶■WHAT SCORE (101 TO 1001)",TB
16 IFTB>1001ORTB<101THEN14
18 PRINTLEFT$(D$,7):INPUT"▶▶▶■PLAYER ONE'S NAME ",N$(1):N$(1)=N$(1)+"          "
20 IFLEN(N$(1))>10THENN$(1)=LEFT$(N$(1),10)
22 PRINTLEFT$(D$,8):INPUT"▶▶▶■PLAYER TWO'S NAME ",N$(2):N$(2)=N$(2)+"          "
24 IFLEN(N$(2))>10THENN$(2)=LEFT$(N$(2),10)
26 PRINT"♥":TB(1)=TB:TB(2)=TB:GOTO400
28 PRINT"▼■╭─────────┬──────────┬──────────╮"
30 PRINT"│ ■NAME■    │■",N$(1),"■│■",N$(2),"■│"
32 PRINT"├─────────┼──────────┼──────────┤"
34 PRINT"│ ■POINTS LEFT■ │          │          │"
36 PRINT"├─────────┼──────────┼──────────┤"
38 PRINT"│ ■POINTS SCORED■│          │          │"
40 PRINT"├─────────┼──────────┼──────────┤"
42 PRINT"│ ■NO. OF THROWS■│          │          │"
44 PRINT"├─────────┼──────────┼──────────┤"
46 PRINT"│ ■AVERAGE■     │          │          │"
48 PRINT"├─────────┼──────────┼──────────┤"
50 PRINT"│ ■PER DART■    │          │          │"
52 PRINT"├─────────┼──────────┼──────────┤"
54 PRINT"│ ■HIGHEST■     │          │          │"
56 PRINT"├─────────┼──────────┼──────────┤"
58 PRINT"│ ■LOWEST■      │          │          │"
60 PRINT"├─────────┼──────────┼──────────┤"
62 PRINT"│ ■TRY DOUBLE■ -■ │          │          │"
64 PRINT"╰─────────┴──────────┴──────────╯"
76 PRINT"■▼▼▼▼■"LEFT$(E$,17),TB(1)
78 PRINT"■▼▼▼■"LEFT$(E$,28);TB(2)
80 PRINT"■▼▼▼▼▼▼■"LEFT$(E$,17);PS(1)
82 PRINT"■▼▼▼▼▼■"LEFT$(E$,28),PS(2)
84 PRINT"■▼▼▼▼▼▼▼■"LEFT$(E$,17),TH(1)
86 PRINT"■▼▼▼▼▼▼▼■"LEFT$(E$,20),TH(2)
88 PRINTLEFT$(D$,10),LEFT$(E$,17),AV(1)
90 PRINTLEFT$(D$,10),LEFT$(E$,28),AV(2)
92 PRINTLEFT$(D$,12),LEFT$(E$,17),AD(1)
94 PRINTLEFT$(D$,12),LEFT$(E$,20),AD(2)
96 PRINTLEFT$(D$,14),LEFT$(E$,17),NS(1)
98 PRINTLEFT$(D$,14),LEFT$(E$,28),NS(2)
100 PRINTLEFT$(D$,16),LEFT$(E$,17),LS(1)
102 PRINTLEFT$(D$,16),LEFT$(E$,20),LS(2)
104 PRINTLEFT$(D$,18),LEFT$(E$,17),DB(1)
106 PRINTLEFT$(D$,18),LEFT$(E$,28),DB(2)
110 PRINTLEFT$(D$,20),"■PRESS ■1■ FOR ■",N$(1),"■ 2■ FOR ■";N$(2):SC(X)=0
112 GETA$:IFA$=""THEN112
114 IFA$="1"THENX=1:GOSUB270:GOTO120
116 IFA$="2"THENX=2:GOSUB270:GOTO120
118 GOTO112
120 PRINT"■■"N$(X),:INPUT"■ENTER SCORE■",SC(X):SC(X)=INT(SC(X))
121 IFTB(X)-SC(X)=0THENLE(X)=LE(X)+1:GOSUB250:GOTO400
122 IFTB(X)-SC(X)<2ORSC(X)>180THENPRINT"■■SCORE TOO HIGH                   ":GOTO110
123 IFSC(X)<0THENPRINT"■■SCORE TOO LOW                   ":GOTO110
124 PS(X)=PS(X)+SC(X):TB(X)=TB(X)-SC(X)
```

```
126 TH(X)=TH(X)+1
128 AV(X)=INT(PS(X)/TN(X)) AD(X)=INT(AV(X)/3)
130 IFSC(X)>HS(X)THENHS(X)=SC(X)
132 IFSC(X)<LS(X)THENLS(X)=SC(X)
134 PRINTLEFT$(D$,22)"                                  "
136 IFTB(X)<=40ANDTB(X)/2=INT(TB(X)/2)THENDB(X)=TB(X)/2 GOTO28
138 DB(X)=0 GOTO28
200 VO=54296 HF=54273 WA=54276 AT=54277 SU=54278
202 POKEAT,32 POKESU,255 POKEVO,15 RETURN
250 POKEWA,17 FORT=200TO1STEP-3 POKEHF,T NEXT POKEHF,0 RETURN
260 POKEWA,33 FORT=1TO200 POKEHF,T FORW=1TO20 NEXT NEXT POKEHF,6
262 FORT=1TO50 NEXT POKEHF,0 RETURN
270 POKEWA,33 POKEHF,20 FORW=1TO50 NEXT POKEHF,0 RETURN
300 PRINTLEFT$(D$,22),N$(X)," WINS!!!!!!                 " GOSUB260
302 PRINTLEFT$(D$,22),"  ANOTHER GO(Y/N)                            "
304 GETA$ IFA$=""THEN304
306 IFA$="Y"THENCLR RUN
308 IFA$="N"THENPOKE53281,6 POKE53280,14 PRINT"▯▯" END
310 GOTO304
400 PRINT"▯▯▯▯▯▯▯▯▯LEGS"
402 PRINT"▯▔▔▔▔"
404 PRINT"▯▯▯▯▯▯▯",N$(1),LE(1)
406 PRINT"▯▯▯▯▯▯▯",N$(2),LE(2)
408 FORX=1TO2
410 AV(X)=0 AD(X)=0 TH(X)=0
412 TB(X)=TB PS(X)=0 NEXT
414 IFLE(1)=3THENX=1 GOTO450
415 IFLE(2)=3THENX=2 GOTO450
416 FORT=1TO2000 NEXT PRINT"▯" GOTO28
450 GOTO300
```

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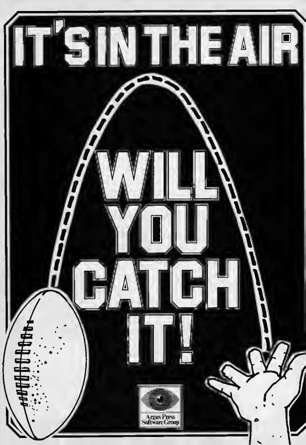
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3	Tornado Low Level	Vortex	Spectrum (10)
4	Fighter Pilot	Digital Int.	Spectrum (3)
5	Les Flics	PSS	Spectrum (-)
6	Frak	Aardvark	BBC (7)
7	Trashman	Quicksilva	CBM 64 (5)
8	Beach Head	US Gold	CBM 64 (6)
9	Jet Set Willy	Software Projects	Spectrum (9)
10	Son of Blagger	Alligata	CBM 64 (8)

NON-ARCADE

1	Valhalla	Legend	CBM 64 (1)
2	Mugsy	M House	Spectrum (2)
3	War of the Worlds	CRL	Spectrum (3)
4	The Hobbit	M House	CBM 64 (4)
5	The Inferno	R Shepherd	Spectrum (6)
6	Fall of Rome	APS	Spectrum (5)
7	Sphinx Adventure	Acornsoft	BBC (7)
8	Lords of Midnight	Beyond	Spectrum (-)
9	Mastermind	Commodore	CBM 64 (8)
10	Classic Adventure	M House	CBM 64 (10)

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SPECTRUM

1	Match Point	Sinclair (1)
2	Voyage into the Unknown	Mastertronic (-)
3	Jet Set Willy	S Projects (5)
4	Bulls Eye	Mastertronics (10)
5	Election	Mastertronic (-)
6	Stop the Express	Sinclair (4)
7	Crasher	Mastertronic (-)
8	Fighter Pilot	Digital Int. (8)
9	Mugsy	M House (2)
10	Night Gunner	Digital Int. (7)

COMMODORE 64

1	Squirm	Mastertronic (3)
2	Beach Head	Centresoft (7)
3	The Election Game	Mastertronic (2)
4	Hektik	Mastertronic (1)
5	Flight Path 737	Anirog (-)
6	Space Pilot	Anirog (-)
7	Bionic Granny	Mastertronic (-)
8	Munch Mania	Mastertronic (-)
9	Sub Hunt	Mastertronic (-)
10	Manic Miner	Software Projects (-)

DRAGON 32

1	Hunchback	Ocean (2)
2	Cuthbert in the Jungle	Microdeal (3)
3	Pedro	Imagine (-)
=	Chuckie Egg	A & F (1)
5	Dragon Chess	Oasis Software (6)
6	Bug Diver	Mastertronic (-)
7	Morocco Grand Prix	Microdeal (-)
8	Mystery of the Java Star	Shards (-)
9	Cave Fighter	Cable Soft (-)
10	Cuthbert goes Digging	Microdeal (8)
=	Mr Dig	Microdeal (7)

Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.

VIC-20

1	Duck Shoot	Mastertronic (-)
2	Sub Commander	Creative Sparks (8)
3	Tank Commander	Creative Sparks (5)
4	Tower of Evil	Creative Sparks (7)
5	Computer War	Creative Sparks (3)
6	Wizard and the Princess	Mel. House (3)
7	Sub Hunt	Mastertronic (-)
8	Bewitched	Imagine (2)
9	Flight Simulator	Ferranti Des. (1)
10	3D Mead	Mastertronic (-)

BBC

1	Football Manager	Addictive Games (1)
2	747 Simulator	Doctor Soft (-)
3	Fun Games	BBC (-)
=	First Steps with Mr Men	Mirrorsoft (-)
=	Saloon Sally	Psion (-)
=	Spectipede	Mastertronic (5)
7	Mined Out	Quicksilva (-)
8	Space Invaders	Bug Byte (-)
9	Missile Control	Gemini (-)
10	Diamond Mine	MRM (8)

ZX81

1	Alien Rain	CRL (1)
=	Krypton Ordeal	Novus (2)
3	Planet Raider	Novus (3)
4	Walk the Plank	Novus (5)
5	Black Crystal	Carnell (4)
=	Espionage Island	DK'Tronics (9)
=	Games 1K	Sinclair (7)
8	Mothership	Sinclair (9)
=	Planet of Death	Sinclair (-)
=	Flight Simulation	Sinclair (-)
=	ZXAS Assembler	Bug Byte (-)

How to convert VIC li

Have you eve
screen an

How it works

10-30 program introduction
40 90 load F with POKE values for UDGs
100-150 instructions and summary of VIC 20 POKEs allowed
180-180 input A$ and error trap
200-290 split A$ into address and POKE value
300 error mesage and return
310 320 calculate X and Y
330 finds if character is to be in inverse video
340-400 assign equivalent Spectrum CHR$ or directs to UDG routine
410-500 assign values to D and I
510-700 information print out (character, position, etc)
710-720 return to instructions
730-780 POKEs Spectrum UDG for display
790-1450 DATA for array F
1460-1470 as lines 310-320
1480-1550 assigns colour name for character colour and equivalent Spectrum colour code
1560 Error trap
1570-1600 information print out (character colour)
1610-1630 return to instructions
1660 calculates values for H and K
1650 error trap
1670-1700 loads E$
1710 1720 DATA for E$
1730-1770 information print out (screen and border colours)
1780-1830 loads L
1840-1870 information print out (continuation of lines 1730 1770)
1880-1900 return to instructions
1910-1930 information print out (caps on/off)
1940-1960 return to instructions
1970-2020 information print out (sound POKEs)
2030-2060 search N for P and assign value to I
2070-2110 DATA for N
2120-2150 information print out (VIC 20 sound POKEs and BEEP equivalents)
2160-2180 return to instructions

This program will be of use to those readers who would like to try their hand at converting VIC-20 listings to run on the Spectrum

VIC 20 POKEs allow characters to be POKEd into predetermined positions in the screen display Also, the colour of the character and the colours of the screen and border can be POKEd.

Because of the way in which the Spectrum screen memory is organised the VIC-20 POKEs must be replaced by PRINT AT, BORDER PAPER and INK commands The VIC 20 character set also contains a number of characters not found in the Spectrum character set These must be converted to user defined graphic characters (UDGs) if they are to be used

The program deals with POKEs for both the expanded and unexpanded versions of the VIC-20 computer

The VIC-20 has four "voices" which are turned on by POKEing the appropriate addresses with the pitch values The voices remain on until POKEd off The duration is usually controlled by a FOR/NEXT loop One of the voices produces "white noise' which is best simulated on the Spectrum by a repeated BEEP of low pitch and short duration

Permissible addresses for the POKEs are given in the program but because of the wide range of values these are [illegible]

A brief indication of these values is as follows

Address start	Permitted values and type
4096 and 7680	0 to 255 characters (above 127 inverse video)
37888 and 38400	5,28,30,31,144,156, 158,159 character colour
36879	8 to 255 but must be in the form 8*n + p where n is odd and between 1 and 31 and p is between 0 and 7 Screen and border colours
36874	135 to 241 Not all numbers in this range are used Sound POKEs
36869	240 and 242 Caps control

A further complication is that whereas the Spectrum screen occupies a 22 x 22 grid, that of the VIC 20 is 24 x 22 For values of X greater than 21 an adjustment to the program being copied should be made

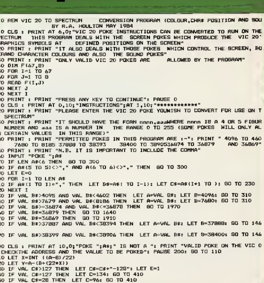
Leaving out line 0, the listing takes up 13072 bytes or roughly 12 77K and when RUN takes up some 16 1K Obviously, this is below the limit for the 48K Spectrum but above that of the 16K Spectrum However, it is possible to divide the program into its component parts, dealing with one particular set of POKEs at a time This should enable 16K owners to make use of the program

Variables

A$ input string for VIC 20 POKE
B$ VIC 20 POKE Address
C$ VIC 20 POKE Value
D$ character colour names
E$ array for screen and border colour names
A value of B$
B start address of VIC-20 screen grid
C value of equivalent Spectrum CHR$
D flag to indicate Set 1 and/or Set 2 of VIC 20 characters
E flag for inverse video
F array holding Spectrum POKE values of those VIC characters not in the Spectrum character set
G Spectrum code numbers for character colours
H Pointer to colour name in E$ and in L for screen colour
I and J counters used in loops
K pointer to colour name in E$ and in L for border colour
L array to hold Spectrum colour codes
N array to hold VIC 20 sound POKE values
P value of VIC 20 sound POKE
X Spectrum PRINT AT x co ordinate
Y Spectrum PRINT AT y co ordinate

envied your friends' VIC-20 programs? Learn how to convert the sound POKEs for your Spectrum, thanks to Tony Houlton

stings for the Spectrum



```
   0 REM VIC 20 TO SPECTRUN     CONVERSION PROGRAN (COLOUR,CHR$ POSITION AND SOU
ND)                 BY R.A. HOULTON MAY 1984
  10 CLS : PRINT AT 6,0;"VIC 20 POKE INSTRUCTIONS CAN BE CONVERTED TO RUN ON THE
 SPECTRUM   THIS PROGRAN DEALS WITH THE  SCREEN POKES WHICH PRODUCE THE  VIC 20'
s GRAPHICS SYMBOLS AT    DEFINED POSITIONS ON THE SCREEN"
  20 PRINT : PRINT "IT ALSO DEALS NITH THOSE POKES  WHICN CONTROL THE SCREEN, BO
RDERAND CHARACTER COLOURS AND ALSO  TNE SOUND POKES"
  30 PRINT : PRINT "ONLY VALID VIC 20 POKES ARE     ALLOWED BY THE PROGRAM"
  40 DIM F(67,8)
  50 FOR I=1 TO 67
  60 FOR J=1 TO 8
  70 READ F(I,J)
  80 NEXT J
  90 NEXT I
 100 PRINT : PRINT "PRESS ANY KEY TO CONTINUE": PAUSE 0
 110 CLS : PRINT AT 0,10;"INSTRUCTIONS";AT 1,10;"************"
 120 PRINT : PRINT "PLEASE ENTER THE VIC 20 POKE YOUNISH TO CONVERT FOR USE ON T
HE  SPECTRUM"
 130 PRINT : PRINT "IT SHOULD HAVE THE FORN nnnn,aaaWHERE nnnn I8 A 4 OR 5 FIGUR
E   NUMBER AND aaa IS A NUMBER IN   THE RANGE 0 TO 255 (SOME POKES  WILL ONLY AL
LOW CERTAIN VALUES  IN THIS RANGE)"
 140 PRINT : PRINT "PERMITTED POKES IN THIS PROGRAM ARE :-": PRINT " 4096 TO 460
1      7680 TO 8185 37888 TO 38393    38400 TO 3890536874 TO 36879    AND 36869"
 150 PRINT : PRINT "N.B. IT IS IMPORTANT TO INCLUDE THE COMMA"
 160 INPUT "POKE ";A$
 170 IF LEN A$<6 THEN  GO TO 300
 180 IF A$(5 TO 5)<>"," AND A(6 TO 6)<>"," THEN  GO TO 300
 190 LET E=0
 200 FOR I=1 TO LEN A$
 210 IF A$(I TO I)="," THEN  LET B$=A$( TO I-1): LET C$=A$(I+1 TO ): GO TO 230
 220 NEXT I
 230 IF VAL B$>4095 AND VAL B$<4602 THEN  LET A=VAL B$: LET B=4096: GO TO 310
 240 IF VAL B$>7679 AND VAL B$<8186 THEN  LET A=VAL B$: LET B=7680: GO TO 310
 250 IF VAL B$>=36874 AND VAL B$<=36878 THEN  GO TO 1970
 260 IF VAL B$=36879 THEN  GO TO 1640
 270 IF VAL B$=36869 THEN  GO TO 1910
 280 IF VAL B$>37887 AND VAL B$<38394 THEN  LET A=VAL B$: LET B=37888: GO TO 146
0
 290 IF VAL B$>38399 AND VAL B$<38906 THEN  LET A=VAL B$: LET B=38400: GO TO 146
0
 300 CLS : PRINT AT 10,0;"POKE ";A$;" IS NOT A ": PRINT "VALID POKE ON THE VIC 0
.  CHECKTHE ADDRESS AND THE VALUE TO BE POKED": PAUSE 200: GO TO 110
 310 LET X=INT ((A-B)/22)
 320 LET Y=A-(B+(22*X))
 330 IF VAL C$>127 THEN  LET C$=C$+"-128": LET E=1
 340 IF VAL C$=127 THEN  LET C=134: GO TO 410
 350 IF VAL C$=28 THEN  LET C=96: GO TO 410
 360 IF VAL C$>=0 AND VAL C$<31 THEN  LET C=VAL C$+64: GO TO 410
 370 IF VAL C$=31 THEN  LET C=144: LET I=67: GO TO 740
 380 IF VAL C$>=32 AND VAL C$<64 THEN  LET C=VAL C$: GO TO 410
 390 IF VAL C$>=64 AND VAL C$<127 THEN  LET C=144: GO TO 730
 400 IF VAL C$=127 THEN  LET C=134
 410 IF VAL C$=0 THEN  LET D=0: GO TO 510
 420 IF VAL C$=127 THEN  LET D=0: GO TO 510
 430 IF VAL C$>=1 AND VAL C$<27 THEN  LET D=VAL C$+96: GO TO 510
 440 IF VAL C$>=27 AND VAL C$<65 THEN  LET D=0: GO TO 510
 450 IF VAL C$>=65 AND VAL C$<91 THEN  LET D=VAL C$: GO TO 510
 460 IF VAL C$>=91 AND VAL C$<94 THEN  LET D=0: GO TO 510
 470 IF VAL C$=94 OR VAL C$=95 THEN  LET D=144: LET I=VAL C$-30: GO TO 510
 480 IF VAL C$>=76 AND VAL C$<105 THEN  LET D=0: GO TO 510
 490 IF VAL C$=105 THEN  LET D=144: LET I=66: GO TO 510
 500 IF VAL C$>=106 AND VAL C$<128 THEN  LET D=0
 510 CLS : PRINT "VIC 20 POKE ";A$
 520 PRINT : PRINT "THIS IS A SCREEN POKE WHICH WILL": PRINT "PRINT ";"""";CHR$
C;"""";" FROM SET 1"
 530 IF E=1 THEN  PRINT "IN INVERSE VIDEO"
 540 PRINT "AT POSITION ";X;",";Y
 550 IF X>21 THEN  PRINT "THIS IS OUTSIDE THE SPECTRUM": PRINT "RANGE"
 560 IF C<>144 THEN  PRINT "IT IS SPECTRUM CHR$ ";C
 570 IF C=144 THEN  PRINT "IT IS A SPECTRUM USER DEFINED   GRAPHIC OBTAINED BY P
OKING THESENUMBERS"
 580 IF VAL C$>=64 AND VAL C$<127 THEN  FOR J=1 TO 8: PRINT F(VAL C$-63,J);",";:
 NEXT J: PRINT : PRINT "INTO A UDG AREA OF MEMORY"
 590 IF D=0 THEN  GO TO 690
 600 IF D=144 THEN  GO TO 740
 610 PRINT "OR WILL PRINT ";"""";CHR$ D;"""";" FROM SET 2"
 620 IF E=1 THEN  PRINT "IN INVERSE VIDEO"
 630 IF D<>144 THEN  PRINT "WHICH IS SPECTRUM CHR$ ";D
 640 IF D=144 THEN  PRINT "WHICH IS A SPECTRUM USER DEFINEDGRAPHIC OBTAINED BY P
OKING THESENUMBERS"
 650 IF D=144 THEN  FOR J=1 TO 8: PRINT F(I,J);",";: NEXT J: PRINT : PRINT "INTO
 A UDG AREA OF MEMORY"
 660 GO TO 690
 670 PRINT "SET 2 IS TURNED ON BY THE VIC 20POKE 36869,242"
 680 PRINT "TO RETURN TO MENU PRESS ANY KEY": GO TO 710
 690 PRINT "SET 1 IS TURNED ON BY THE VIC 20POKE 36869,240": IF D=0 THEN  PRINT
"TO RETURN TO MENU PRESS ANY KEY"
 700 IF D<>0 THEN  GO TO 670
 710 IF INKEY$="" THEN  GO TO 710
 720 GO TO 110
 730 LET I=VAL C$-63
 740 LET a=USR "a"
 750 FOR J=1 TO 8: POKE a,F(I,J)
 760 LET a=a+1: NEXT J
 770 IF I>=64 AND I<=66 THEN  GO TO 610
 780 GO TO 410
 790 DATA 0,0,0,0,255,0,0,0
 800 DATA 8,28,62,127,127,54,8,54
 810 DATA 16,16,16,16,16,16,16,16
 820 DATA 0,0,0,255,0,0,0,0
 830 DATA 0,0,255,0,0,0,0,0
 840 DATA 0,255,0,0,0,0,0,0
 850 DATA 0,0,0,0,0,255,0,0
 860 DATA 64,64,64,64,64,64,64,64
 870 DATA 2,2,2,2,2,2,2,2
 880 DATA 0,0,0,0,192,32,16,16
 890 DATA 8,8,4,3,0,0,0,0
 900 DATA 16,16,32,192,0,0,0,0
 910 DATA 128,128,128,128,128,128,128,128
 920 DATA 128,64,32,16,8,4,2,1
 930 DATA 1,2,4,8,16,32,64,128
 940 DATA 255,128,128,128,128,128,128,128
 950 DATA 255,1,1,1,1,1,1,1
 960 DATA 0,0,56,124,124,124,56,0
 970 DATA 0,0,0,0,0,0,0,255
 980 DATA 54,127,127,62,62,28,28,8
 990 DATA 128,128,128,128,128,128,128,128
1000 DATA 0,0,0,0,3,4,8,8
1010 DATA 129,66,36,24,24,36,66,129
1020 DATA 0,0,56,68,68,68,56,0
1030 DATA 28,28,8,99,119,107,8,62
1040 DATA 2,2,2,2,2,2,2,2
1050 DATA 8,28,62,127,127,62,28,8
1060 DATA 16,16,16,16,255,16,16,16
1070 DATA 160,64,160,64,160,64,160,64
1080 DATA 8,8,8,8,8,8,8,8
1090 DATA 0,57,86,18,18,18,18,0
1100 DATA 255,127,63,31,15,7,3,1
1110 DATA 0,0,0,0,0,0,0,0
1120 DATA 240,240,240,240,240,240,240,240
1130 DATA 0,0,0,0,255,255,255,255
1140 DATA 255,0,0,0,0,0,0,0
1150 DATA 0,0,0,0,0,0,0,255
1160 DATA 128,128,128,128,128,128,128,128
1170 DATA 170,85,170,85,170,85,170,85
1180 DATA 1,1,1,1,1,1,1,1
1190 DATA 0,0,0,0,170,85,170,85
1200 DATA 255,254,252,248,240,224,192,128
1210 DATA 7,7,7,7,7,7,7,7
1220 DATA 16,16,16,31,16,16,16,16
1230 DATA 0,0,0,0,15,15,15,15
1240 DATA 16,16,16,16,31,0,0,0
1250 DATA 0,0,0,240,16,16,16,16
1260 DATA 0,0,0,0,0,0,255,255
1270 DATA 0,0,0,31,16,16,16,16
1280 DATA 16,16,16,255,0,0,0,0
1290 DATA 0,0,0,0,255,16,16,16
1300 DATA 16,16,16,240,16,16,16,16
1310 DATA 192,192,192,192,192,192,192,192
1320 DATA 224,224,224,224,224,224,224,224
1330 DATA 3,3,3,3,3,3,3,3
1340 DATA 255,255,0,0,0,0,0,0
1350 DATA 255,255,255,0,0,0,0,0
1360 DATA 0,0,0,0,0,255,255,255
1370 DATA 1,1,1,1,1,1,1,255
1380 DATA 0,0,0,0,240,240,240,240
1390 DATA 31,31,31,31,0,0,0,0
1400 DATA 16,16,16,16,240,0,0,0
1410 DATA 240,240,240,240,0,0,0,0
1420 DATA 51,51,204,204,51,51,204,204
1430 DATA 51,25,12,198,99,48,152,204
1440 DATA 200,152,49,99,198,140,25,19
1450 DATA 16,32,64,255,64,32,16,0
1460 LET X=INT ((A-B)/22)
1470 LET Y=A-(B+(22*X))
1480 IF VAL C$=5 THEN  LET D$="WHITE": LET G=7: GO TO 1570
1490 IF VAL C$=28 THEN  LET D$="RED": LET G=2: GO TO 1570
1500 IF VAL C$=30 THEN  LET D$="GREEN": LET G=4: GO TO 1570
1510 IF VAL C$=31 THEN  LET D$="BLUE": LET G=1: GO TO 1570
1520 IF VAL C$=144 THEN  LET D$="BLACK": LET G=0: GO TO 1570
1530 IF VAL C$=156 THEN  LET D$="PURPLE": LET G=3: GO TO 1570
1540 IF VAL C$=158 THEN  LET D$="YELLOW": LET G=6: GO TO 1570
1550 IF VAL C$=159 THEN  LET D$="CYAN": LET G=5: GO TO 1570
1560 GO TO 300
1570 CLS : PRINT "VIC 20 POKE ";A$
1580 PRINT : PRINT "THIS IS A SCREEN COLOUR POKE": PRINT : PRINT "WHICH WILL PRI
NT A CHARACTER IN ": PRINT : PRINT D$;" AT POSITION ";X;",";Y
1590 IF X>21 THEN  PRINT : PRINT "THIS IS OUTSIDE THE SPECTRUM": PRINT "RANGE"
1600 PRINT : PRINT "THE SPECTRUM EQUIVALENT IS": PRINT : PRINT "PRINT INK ";G;";
AT ";X;",";Y;";";"""CHARACTER"""
1610 PRINT : PRINT "TO RETURN TO MENU PRESS ANY KEY"
1620 IF INKEY$="" THEN  GO TO 1620
1630 GO TO 110
1640 LET H=INT (VAL C$/8): LET K=2*(VAL C$-8*H)+1
```

```
1650 IF 2*INT (H/2)=H THEN  GO TO 300
1660 DIM E$(31,12)
1670 RESTORE 1710
1680 FOR I=1 TO 31 STEP 2
1690 READ E$(I)
1700 NEXT I
1710 DATA "BLACK","WHITE","RED","CYAN","PURPLE","GREEN","BLUE","YELLOW"
1720 DATA "ORANGE","LIGHT ORANGE","PINK","CYAN","LIGHT PURPLE","LIGHT GREEN","LI
GHT BLUE","LIGHT YELLOW"," "
1730 CLS : PRINT "VIC 20 POKE ";A$
1740 PRINT : PRINT "THIS IS A SCREEN POKE WHICH WILL": PRINT "CONTROL THE SCREEN
 AND BORDER": PRINT "COLOURS.   THESE ARE AS FOLLOWS"
1750 PRINT : PRINT "SCREEN COLOUR ";E$(H): PRINT : PRINT "BORDER COLOUR ";E$(K)
1760 IF H=23 THEN  GO TO 1780
1770 IF H>15 THEN  PRINT : PRINT "THE COLOUR ";E$(H);" IS NOT ASTANDARD SPECTRUM
 COLOUR, TRY TOMAKE A REASONABLE SUBSTITUTION": PRINT "BLUE=1,RED=2,MAGENTA=3,GR
EEN=4  CYAN=5,YELLOW=6,WHITE=7,BLACK=0"
1780 RESTORE 1830
1790 DIM L(15)
1800 FOR I=1 TO 15 STEP 2
1810 READ L(I)
1820 NEXT I
1830 DATA 0,7,2,5,3,4,1,6
1840 PRINT : PRINT "THE SPECTRUM EQUIVALENT IS"
1850 PRINT : PRINT "BORDER ";L(K);
1860 IF H>15 THEN  PRINT ": PAPER ";"""YOUR CHOICE""": GO TO 1880
1870 PRINT ": PAPER ";L(H)
1880 PRINT : PRINT "PRESS ANY KEY TO RETURN TO MENU"
1890 IF INKEY$="" THEN  GO TO 1890
1900 GO TO 110
1910 CLS : PRINT "VIC 20 POKE 36869,";C$
1920 IF VAL C$=240 THEN  PRINT : PRINT "THIS POKE SETS THE COMPUTER TO  PRINT IN
 CAPITAL LETTERS.   THE SPECTRUM EQUIVALENT IS          POKE 23658,8"
1930 IF VAL C$=242 THEN  PRINT : PRINT "THIS POKE SETS THE COMPUTER TO  PRINT IN
 LOWER CASE LETTERS.    THE SPECTRUM EQUIVALENT IS      POKE 23658,0"
1940 PRINT : PRINT "PRESS ANY KEY TO RETURN TO MENU"
1950 IF INKEY$="" THEN  GO TO 1950
1960 GO TO 110
1970 CLS : PRINT "VIC 20 POKE ";A$: PRINT : PRINT "THIS IS A SOUND POKE WHICH GI
VES"
1980 IF VAL B$=36878 THEN  GO TO 2020
1990 PRINT : PRINT "FOR 36874 AN ALTO VOICE          FOR 36875 A TENOR VOICE
   FOR 36876 A SOPRANO VOICE   AND FOR 36877 WHITE NOISE(A BUZZ)"
2000 IF VAL C$=0 THEN  PRINT : PRINT "POKE ";A$;" SWITCHES VOICE OFF"
2010 GO TO 2030
2020 IF VAL B$=36878 THEN  PRINT : PRINT "VOLUME CONTROL": PRINT "3 TURNS ON 0 T
URNS OFF.          RANGE IS 0 TO 15.  THE SPECTRUM HAS NO VOLUME CONTROL": GO TO
2160
2030 DIM N(38): RESTORE 2070
2040 FOR I=1 TO 38
2050 READ P: LET N(I)=P: IF VAL C$=P THEN  GO TO 2130
2060 NEXT I
2070 DATA 135,143,147,151,159,163,167,175
2080 DATA 179,183,187,191,195,199,201,203
2090 DATA 207,209,212,215,217,219,221,223
2100 DATA 225,227,228,229,231,232,233,235
2110 DATA 236,237,238,239,240,241
2120 PRINT : PRINT "THIS PITCH IS NOT WITHIN THE    RANGE OF THIS PROGRAM.  IF L
ESS THAN 128 IT PRODUCES SILENCE    ABOVE 241 IS A HIGH SHRILL NOTE"
2130 PRINT : PRINT "THIS NOTE IS SIMULATED BY THE   SPECTRUM DEEP HAVING PITCH "
;I-25: PRINT "SERIES OF NOTES ARE OFTEN         CONTAINED IN DATA LISTS.       FO
R INFORMATION ABOUT DURATION  PRESS ANY KEY"
2140 IF INKEY$="" THEN  GO TO 2140
2150 CLS : PRINT AT 7,0;"DURATION IS OBTAINED BY ALLOWINGTHE NOTE TO SOUND THROU
GHOUT THELENGTH OF TIME TAKEN TO EXECUTE A ";CHR$ 34;" FOR I=1 TO N: NEXT I ";CH
R$ 34;" LOOP.": PRINT "A VALUE OF 1000 FOR N IS         ROUGHLY EQUIVALENT TO ONE
 SECONDOR A SPECTRUM BEEP DURATION OF 1"
2160 PRINT : PRINT "PRESS ANY KEY TO RETURN TO MENU"
2170 IF INKEY$="" THEN  GO TO 2170
2180 GO TO 110
```

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16K ZX81
Here is a selection of titles still available for ZX81. Send s.a.e. for illustrated catalogue. These are the ZX81 equivalents of the Spectrum programs described above. Although similar in concept the specifications fall short of the descriptions given for the Spectrum.

FOOTBALL LEAGUE
Forerunner of "Day of the Match" £4.00
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Pick and mix

Here's a new selection of games for a variety of machines. You should find something here to catch your interest

The Beetle Run TI-99/4A £5

Stainless, 10 Alstone Rd, Stockport, Cheshire

Here's five different screens of fast action for your unexpanded TI. I must admit I had to cheat to check all five.

Using the cursor keys, a little cramped for comfort, you move a beetle round the screen either collecting or avoiding, depending on screen. Once you've started moving you can't stop or even go back the way you came as crossing your trail loses a life.

On the first screen you must recover 20 rings or, if you haven't the right technique or luck, take a transporter to the next screen. Here you collect all the pills but avoid the rocks. Unless you are quick enough to guide your beetle through a carefully planned route, this screen will never be completed.

Screen three is a bottomless pit to cross. On screen four there are pills to collect again, but this time a random set of rocks to be avoided. On screen five you try to prevent any collisions once more, but are unable to move up or down.

Overall, good — even when you cheat **J.W.**

instructions	90%
playability	80%
graphics	80%
value for money	85%

★ ★ ★ ★

Tube Way Army Dragon 32/ Tandy Colour Computer £7.50

Crystal Computing, 2 Ashton Way, East Herrington, Sunderland SR3 3RX

If you like Skramble this is for you! Here is a reasonably faithful transfer of the arcade game for your Dragon or CoCo but it does have its drawbacks, I'm afraid. The object is to penetrate the enemy defences involving terrain, caverns, fireballs and the tunnel or maze and then destroy the base.

Unfortunately this is a game for those with three hands. There is no way that you can both fire your guns and drop your bombs at the same time. You can select either keyboard or joystick control but the keys are a really difficult combination and when using sticks in order to drop a bomb whilst firing you have to let go of the stick to press the space bar. This might be alright if you have a self-centring joystick but most people don't.

Other criticisms are the slow speed in the initial stages. One of my friends believes you lose lives from boredom not lack of skill. On the plus side the graphics are very good and the speech is the best I have heard, with no additions required **D.C.**

instructions	75%
playability	50%
graphics	90%
value for money	75%

★ ★ ★ ★

Table Adventures Dragon 32 £10.95

Dragon Data, Kenfig Industrial Estate, Margam, Port Talbot SA13 2PE

This program is likely to answer many a parent's prayers, for it tries to combine the interest of playing computer games with the job of learning tables. If it was simply a table tutor then I wouldn't recommend it but far from being a simple drill-program this suite of four programs actually involves using the tables children should have learned.

The first program is the most heavily drill based and requires deciding how many fives there are in 35, for example. The game involves the search for gold at the end of the rainbow hence its title Rainbow's End.

Shooting the Rapids involves factors. You must choose a factor for each of the numbered rocks your canoe hits. Underground Escape also involves factors but here they must be common to two out of the three numbers. The final factor game is Number Farmhouse in which all the factors of a number are deleted when chosen. The aim is to be left with the smallest result possible. All the programs are graphically good and educationally very sound. I would recommend this to any parent or teacher wanting to provide interesting table extension work **D.C.**

instructions	75%
ease of use	90%
graphics	80%
value for money	90%

★ ★ ★ ★ ★

Flip Flap TI-99/4A £6

Stainless, 10 Alstone Rd, Stockport, Cheshire

This has all the ingredients of an addictive arcade game — good graphics, fast action and plenty of bonuses.

The first screen shows a pattern of squares. You must visit each of them twice to change their colour. When all have been turned to the second colour you progress onto the next screen where squares are arranged in a more difficult configuration, and so on.

On all screens there are black skulls, making good timing imperative if you are to avoid them. Points are deducted should you hesitate, and a life lost if caught.

On every screen there's a letter square which changes a letter from the word Extra. When you've managed to reach and cross all five letters a bonus life is awarded. Ringing the bell will boost your score, but this may only be done once. The letter square also changes into a bonus square to increase your score even more.

Definitely one of those games that become more addictive the more you play. To begin with it all seems very easy, but by the time you've entered the fourth screen, fingers are clenched. Needs Extended BASIC and joystick **J.W.**

instructions	80%
playability	85%
graphics	80%
value for money	90%

★ ★ ★ ★ ★

River Rescue Atari £8.95

Creative Sparks, Thomson Hse, 296 Farnborough Rd, Farnborough, Hants GU14 7NU

The first thing I noticed was the complete absence of any playing instructions. The game is described as a rescue mission through a jungle to find a team of important scientists. You own a powerful riverboat and aim to collect the reward offered for their safe return.

Soon after starting my journey my problems began. I travelled up the river shooting crocodiles and destroying logs with my bow-mounted cannon but couldn't find any scientists. No instructions meant I wasted a lot of time before I stumbled across my first scientist by accident. I then discovered (much later!) that I needed to be carrying at least five scientists before the enemy helicopters appear.

After around three hours of play I have yet to collect my "reward!" This wasted time could have been avoided with a few guide lines to follow. However, the game has a fully scrolling screen, the graphics are good and sound effects are very realistic. River Rescue does indeed deserve some credit, infuriating as it is. Please, Creative Sparks, let us know what we are supposed to be doing in future **D.W.L.**

instructions	0%
playability	60%
graphics	75%
value for money	80%

★ ★ ★

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FINANCE MANAGER is a powerful flexible and fast MENU DRIVEN general purpose program carefully designed to handle up to 255 separate accounts for domestic and business accounting applications. The magic of MACHINE CODE has enabled us to produce the very latest 'on the page' presentation which lets you enter and edit data naturally as if with a pencil and paper.

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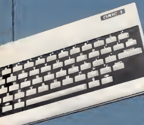

Your slow but trusty sailing barge is waiting in the bottom left of the screen for you to sail it to the top left where you will receive £5,000

From there you return to your home port Sounds easy? Wait until you hear about the hazards

There are four randomly-placed buoys in the sea and an unknown quantity of submerged rocks, which are picked up by your defective sonar It only works ahead, above, ahead/above and above/behind The pings sound when you are next to a rock

On the left is the shoreline and, as the tide is on the ebb, you are likely to be stranded

Each lost ship costs £5,000 and refloating costs £2,000

So remember the route home and don't lose any ships!

Good sailing

Variables

A,B,C,D,E,F,G,H buoy positions
I,J ship position
R money
AB and **CD** finish with profit
U and **P,S** rock number and places
K,Q shore-line

Hints on conversion

PLOT can be replaced by PRINT AT PAPER and INK change background and foreground to letters and give double height SCRN (X,X) = zy checks what is at (X,X) position CHR$(6) and CHR$z(17) turn cursor and click on and off

How it works

5 cursor and click off
20 set variables to 0 and cash to 5000
35-110 set up screen
130-195 main game and check for rocks etc
200-250 PLOT money spent
300-340 POKE "@" into shop
350-480 finish game check for profit another game?
500-540 POKE "," into "'"
600-640 add bonus
710-920 buoy placing
1000-1070 difficulty and rock places
1100-1180 shoreline
1210-1400 instructions

```
1 REM********************
2 REM*  CARGO SAILER  *
3 REM* BY P.VANNUFFEL *
4 REM********************
5 CLS:PRINTCHR$(17):PRINTCHR$(6)
10 GOSUB300:PAPER4:INK7:GOSUB500:GOSUB1200
20 A=0:B=0:C=0:D=0:E=0:F=0:G=0:H=0:N=4:CLS:A$=CHR$(64)
:R=5000:AB=0:Z$="@"
30 GOSUB710:GOSUB1000:CLS
35 REM***BORDER***
40 PLOT0,0,"------------------------------------"
50 PLOT0,26,"----------------------------"
60 FORN=1TO25
70 PLOT0,N,"!"
80 NEXTN:PLOT3,26,"PROFIT _"+V$
90 I=2:J=25:PLOTI,J,"@"
100 GOSUB1100:GOSUB1030
110 PLOT0,24,"~~~~":CD=38
120 REM*****MAIN GAME****
130 PLOTA,B,"#":PLOTC,D,"#":PLOTE,F,"#":PLOTG,H,"#":PL
OT37,1,12:PLOTCD,1,Z$
135 GOSUB200
140 K$=KEY$
141 IFK$=" "THEN200
150 IFK$=CHR$(8)THENI=I-1:PLOTI,J,"@":PLOTI+1,J," "
160 IFK$=CHR$(9)THENI=I+1:PLOTI,J,"@":PLOTI-1,J," "
170 IFK$=CHR$(11)THENJ=J-1.PLOTI,J,"@":PLOTI,J+1," "
180 IFK$=CHR$(10)THENJ=J+1:PLOTI,J,"@":PLOTI,J-1," "
181 IFSCRN(I,J)=35THEN399
182 IFI=1ANDJ=25ANDAB=100THEN460
183 IFI=20ORI=38ORJ=0ORJ>25THENGOSUB400
184 IFI=37ANDJ=1THEN600
185 IFSCRN(I+1,J)=46THEN370
186 IFSCRN(I+1,J)=44ORSCRN(I,J-1)=44ORSCRN(I+1,J-1)=44
THENPING
187 IFSCRN(I-1,J-1)=44THENPING
188 IFSCRN(I-1,J)=44ORSCRN(I,J+1)=44THENGOTO350
193 IFSCRN(I,J)=35THEN399
195 GOTO150
199 REM****CASH FLOW****
200 R=R-50
220 R$=STR$(R)
230 PLOT24,26,"COSTS _      "
240 PLOT31,26,R$
250 RETURN
299 REM+++++YACHT GRAPHICS+++++
300 FORK=0TO7
310 READL:POKE46592+K,L
320 NEXTK
330 DATA8,20,54,80,50,8,63,30
340 RETURN
345 REM+++++++++END ROUTINES******
350 PLOT5,10,2:PLOT6,10,"YOU HIT A SUBMERGED ROCK":R=-
5000
360 PLOT1,11,2:PLOT2,11,"AND ARE NOW IN DAVY JONES' LO
CKER":GOTO480
370 PLOT1,10,3:PLOT2,10,"YOU RAN AGROUND AND WILL HAVE
 TO WAIT":R=-2000
380 PLOT10,11,3: PLOT11,11,"FOR THE NEXT TIDE":GOTO480
399 PLOT0,10,17:PLOT1,10,"YOU'VE CRASHED INTO A BOUY A
```

’re the tain... you stay float?

You need to make a profit too in Cargo Sailer, by Paul Vannuffel, which has hazards to test your seamanship

```
00 SUNK":R=-5000:GOTO409
 400 REM+          +
 404 PLOT2,5,"SAILED OFF THE EDGE OF THE WORLD":POKE482
42,10:R=-5000
 405 PLOT2,6,"SAILED OFF THE EDGE OF THE WORLD":POKE482
82,10
 409 A$=" ":V=V+R:V$=STR$(V)
 410 PLOT1,12,21:PLOT2,12,"DO YOU WANT ANOTHER GAME?(Y/
N)_"
 420 GETB$
 430 IFB$="N"THENPRINTCHR$(17):PRINTCHR$(6):END
 440 IFB$="Y"THENGOTO20
 450 IFB$<>"N"ORB$<>"Y"THEN410
 460 IFV<0THENPLOT1,10,"SAFE BUT IN DEBT - BE QUICKER":
GOTO409
 470 PRINTCHR$(4);CHR$(27);"N      ANOTHER SUCCESSFUL VO
YAGE      ";PRINTCHR$(4)
 480 WAIT500:TEXT:GOTO409
 499 REM*******ROCK GRAPHICS*******
 500 FORA=0TO7
 510 READM:POKE46432+A,M
 520 NEXTA
 530 DATA0,0,0,0,0,0,0,0
 540 RETURN
 599 REM*****BONUS*****
 600 PRINT"_5000 COLLECTED. RETURN AND SPEND IT":R=R+50
00:I$="@ "
 610 PLOTI,J," ":I=I-3
 620 WAIT300:PLOTI,J,"@"
 630 AB=AB+100:CD=36
 640 GOTO130
 705 REM+++++++BOUY GRAPHICS++++++
 710 CLS: A=INT(RND(1)*20)
 720 IFA<5THEN710
 730 B=INT(RND(1)*13)
 740 IFB<5THEN730
 750 PLOTA,B,"@"
 760 C=A+INT(RND(1)*30)
 770 IFC>38THEN760
 780 D=INT(RND(1)*13)
 790 IFD<3THEN780
 800 PLOTC,D,"#"
 810 E=INT(RND(1)*10)
 820 IFE<3THEN810
 830 F=INT(RND(1)*23)
 840 IFF<16THEN830
 850 PLOTE,F,"#"
 860 G=INT(RND(1)*35)
 870 IFG<14THEN860
 880 G=E+INT(RND(1)*35)
 890 IFG>35THEN880
 900 H=INT(RND(1)*23)
 910 IFH<13THEN900
 920 PLOTG,H,"#":RETURN
 999 REM+++SKILL LEVEL++ROCK PLACING++
1000 PRINT"CHOOSE YOUR DIFFICULTY. 1(easy)to30(hard)"
1010 INPUTU:IFU<1ORU>30THEN1010
1020 U=U+11
1025 RETURN
1030 FORO=1TOU
1040 P=INT(RND(1)*34)
1050 S=INT(RND(1)*25)
1060 PLOTP,S,","
1070 NEXTO
1080 RETURN
1100 REM******SHORELINE*******
1110 FORG=2TO25
1120 M=INT(RND(1)*4)+34
1130 FORK=38TOMSTEP-1
1140 PLOTK,G,"."
1150 NEXTK
1160 N=N+1
1170 NEXTG
1180 RETURN
1200 REM*******INSTRUCTIONS*******
 1210 PRINT:PRINT:PRINT"You have to voyage across peril
ous"
 1220 PRINT"rock strewn seas. Collect your cargo"
 1230 PRINT"and return it to your home port."
 1240 PRINT:PRINT"You start at the bottom left."
 1250 PRINT"Recive the cargo at the top right."
 1260 PRINT:PRINT"Unfortunately the echo sounder only"
 1270 PRINT"works ahead and above your present"
 1280 PRINT"position,so remember the route."
 1290 PRINT:PRINT"Many have perished on the rocks."
 1300 PRINT:PRINT"Don t run into the bouys or run agrou
nd or run out of cash"
 1310 PRINT"Beware of sailing to close to the edge. You
 may fall off!"
 1320 PRINTCHR$(4);CHR$(27);"J        Bon Voyage"
 1330 PRINTCHR$(4)
 1340 PRINT:PRINT"USE THE CURSOR KEYS TO MOVE."
 1350 PRINT:PRINT"Press any key to continue."
 1355 PRINT" "
 1360 GETG$:RETURN
 1400 PRINT"L"
```

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On the level

Please, could anyone tell me how to get through the third level of Ian Gray's masterpiece Tales of the Arabian Nights, as on numerous occasions the floating genie keeps catching me

I would also like to know how to do Manic Miner on China Miner, as I keep hitting the head which continually bobs up and down

May I also add my thoughts on those who are entirely against games

I am not really a games addict but I like to shoot up an invader now and again

Without games, the computer becomes a boring calculator for adding up the month's accounts and us kids would lose interest altogether

Finally, has anyone beaten my high score of 95 450 on Attack of the Mutant Camels?

Jon Chatten, Norwich, Norfolk

Strengthen protection

I have read recently about a bogus software company which advertised non-existent games

Surely the solution to this and many other problems with false or poor quality companies is the Guild of Software Houses

I know that there is such a thing and I think (and I'm sure many agree with me) that every software house should be in this Guild

One of the conditions of entry could be that their programs must be of a reasonable standard

By taking these measures, both the quality of the software and its existence can be assured

Leo Bail, Pembrey, Dyfed

One per cent short

I have just escaped from Sabre Wulf, by Ultimate, with a score of 253,060 — and was told I had only completed 99 per cent

This was becoming familiar, because in Atic Atac, also by Ultimate I again can only reach 99 per cent

I have the feeling that there must be a bug because in both cases I checked everywhere I went

Can anyone out there reach that magical 100 per cent in either of the games?

Michael Anthony, Prescot, Merseyside

That Voodoo that you do so well

Just before Christmas I bought Scott Adams' The Count

I was very pleased with it and, after two months of toil and sweat, I managed to solve it

Now, I have bought Voodoo Castle for the VIC-20 This time, after two months of absolute agony, brain pain and frustration, I still have not solved it

So, please, all you thoughtful people out there with a VIC-20 and Voodoo Castle — help!!!!

Jonathan Dale, Codnor, Derbyshire

Fair wear and tear

With reference to D. Ogden's letter (HCW 69) I also had the same problem with my Spectrum keyboard I had fitted an upgrade kit and so invalidated the guarantee Several months later the B, N, M, and SYMBOL SHIFT keys did not respond very well and after a while didn't work at all

I removed the template to inspect the membrane as I was sure I had not stretched the ribbon cable when opening the case The membrane was worn

I had a browse through the classified ads in several different magazines and found a company, Telford Electronics, which sells Spectrum parts with fitting instructions Membranes, templates and rubber keys are available at £5 each and provide a cheaper alternative to paying more than £15 to send your computer away to a repair firm

My order took nine days to arrive and I would like to thank Telford Electronics for a speedy service I can now use my computer again

The Spectrum membranes do wear out after a while and you can't blame Sinclair for wear and tear unless your computer is still under guarantee!

This is Telford Electronics' address in case any reader wishes to write to them: Telford Electronics, Mall 4 Telford Town Centre, Shropshire TF3 4DG

Terry Newman, Norwich

Texas The state of

Many thanks for supporting the Texas TI 99/4A, I don't know what we would do without you

All the listings I have typed in from HCW have worked (after sorting out my own typing errors)

My favourites are Bomber (HCW 1), Lift Attendant (HCW 38), Xmas Party (HCW 42) and Take over the Board (HCW 64) Minefield (HCW 73) also looks good

I think the TI 99/4A is an amazing machine There is still a fair amount of software on the market and new games still keep turning up

I am retired now, my age is 67, and I do get a lot of enjoyment from the computer My two sons have the same model, and I must admit I do get a lot of help from them (and the grandsons)

Once again many thanks for looking after the 'Texans' Well pardners, I must mozie off now, I guess I'll hit the trail to the Computer room

S Merrett, Richmond, Surrey.

Answer in manuals

With regards to Paul Bray's queery (HCW 71) concerning the 'Line-by-Line Assembler' with the 'Mini-Memory' module for the TI 99/4A, the answer lies within the two manuals that are supplied with the module, but in case he is still having difficulties here is how it is done

Load the 'LINES' program supplied via the 'L' option of the 'EASY BUG', quit the Easy Bug and select MINIMEMORY RUN using the program name NEW

You are now into the assembler where machine code can now be written

I would like to thank you for all the programs you have published for the Texas computer since you started and hope that you can keep up the good work in the foreseeable future

P. W. Nicholson, Plymouth

Colours and stripes

I have discovered a way of producing some incredible borders on the Spectrum Normally the border can only be set to one colour but this program produces a multi-coloured striped border:

```
10 BORDER 6: BORDER 2
   BORDER 4: BORDER 5
20 PAUSE 1: GOTO 10
```

The more BORDER statements you put in the first line, the more stripes appear in the border

This next program produces a moving, multi-coloured border:

```
10 BORDER 6: BORDER 2
   BORDER 4: BORDER 5
20 LET L=1: GOTO 10
```

and this program produces a rhythmically moving border

```
10 BORDER 6: BORDER 2
   BORDER 4: BORDER 5
20 INPUT"a": GOTO 10
```

By changing the statement before GOTO 10, a huge variety of different borders can be made

The uses for these borders are endless but they are particularly useful for enhancing instructions

Richard Wright, Richmond

Hooked on Pirate game

I did not think I would be interested in an adventure game called 'Pirate Cove', out on cartridge for the VIC-20

After spending a day playing with the game at a friend's house, I was hooked

But, I just don't know how to get past the crocodiles in the cave in the hill, because the door must be unlocked from both sides, and I cannot unlock it from the crocodiles' side

Typing "HELP" tells you to feed the crocodiles something, but they do not seem to accept crackers

For those who do not know how to get that far, here are the commands that will get you there (from the start)

Get rum, get sneakers, go to stairs, get book (open book, open book), go to passage, go East, get torch, open bag, get matches

Say Yo Ho (only with sneakers on), say Yo Ho again

Go East, go East, go hill, then drop everything but matches and torch, go crack, get sails, get wings, go shed, get hammer (not shovel, it won't fit through the crack) go North, go crack

Note: light torch before going through crack, and extinguish it when you get out again

Get book, drop everything apart from sneakers, and book and hammer. Say Yo Ho, enter window, go down, get nails, get rug, get keys, drop rug, then repeat from beginning up to where you find the lagoon

Find the shack in the meadow, and enter it (with rum), give parrot rum, and wait for Pirate to run off, unlock the chest and you will find plans for a ship

Can someone please tell me what to do now?

Ian Longdon, Hinckley, Leics

Message understood

I am writing to inform you that after many hours spent playing Sabre Wulf, I finally obtained all four pieces of the picture

I got past the keeper and entered the cave where the following message came up on the screen "The next adventure of Sabre Man will be in the Underworld"

As I do not know of anyone else who has completed Sabre Wulf, I was wondering if I was the first?

Craig Wilkinson, Manchester

Send your letters to Letters, Home Computing Weekly, No 1 Golden Square, London W1R 3AB. Don't forget to name your computer — the best letter could win £5 worth of software. Got a problem with your micro? We'll soon be starting a queries page so send your technical questions to Queries at the above address

Useful utilities

Settle down to some creative thinking with these programs. Convert your TV screen into canvas, use a spreadsheet or polish up on your maths

Electro-Art 32K Electron £14.95

Quicksilva, 13 Palmerston Rd,
Southampton SO1 1LL

Originally written for the BBC, this program allows you to convert your TV screen to a canvas on which you can create masterpieces in vivid colours

You can choose from eight colours and the ink for drawing The keys are well chosen and are far away from the break key There's nothing more frustrating than accidentally pressing the break key and wiping out hours of hard work

After drawing a shape you are given a routine for filling in the chosen colour Unfortunately I was unable to make this work and ended up losing my drawing Several other routines allow you to make various shapes

There are also eight flashing colours which will brighten up your drawings The only thing I found lacking is a routine to correct any mistakes instead of redrawing I overcame this by using the background ink to camouflage the mistakes It's not satisfactory but it helps

After you have created your masterpiece you can save it to tape and use it later Apart from the minor bug, this program helps produce excellent pictures Who knows — you may be the modern Da Vinci **M B**

instructions	100%
playability	100%
graphics	N/A
value for money	100%

★ ★ ★ ★ ★

Autocalc 64 CBM 64 £14.95

Richard Shepherd, Elm Hse
23 25 Elmshott La, Clippenham,
Slough, Berks

At last a software company has decided to produce a spreadsheet which the home computer user can afford Autocalc contains most of the features of higher priced spreadsheets and is the same high standard — but costs a fraction of the price

A spreadsheet program is a matrix of boxes Each box may contain text numeric data or a mathematical calculation Using the spreadsheet you may assign formulae to certain boxes so that as data is filled in you can automatically take averages, totals, calculation results, etc The beauty is the easy editing and amending facilities you can change one box and all others which use that value are automatically updated

Autocalc contains all the standard mathematical functions the CBM 64 offers plus average and totaling Numeric output can be specified as integer currency (to decimal places) or floating point Both left and right justification of your boxes are available You may also specify how calculations are to be carried out, by columns or rows

My only complaint about the package is that it cannot be output to parallel printers using the user port Only printers connected to the serial port may be used **K I**

instructions	85%
ease of use	95%
display	95%
value for money	100%

★ ★ ★ ★ ★

Maths Utilities Pack 1 (Vols 1 & 2) Spectrum £3.50

Solway, 6 Curzon St Maryport,
Cumbria CA15 6LL

Volume 1 contains a graph plotter with the options of equal axes dimensions or auto and resolution high or low You input the function and minimum and maximum values for x' The program then draws the axes, adding values and finally drawing the graph Input an incorrect function and the program tells you "it's nonsense" and, as it's a BASIC program, RUN 5 returns to start

The next volume's contents offers simultaneous and quadratic equations Again any error can be overcome by returning to start via RUN 5 except where a green r appears top screen right — then pressing r' returns to Contents

A brief explanation precedes request to enter the number of simultaneous equations You enter the two coefficients and the constant for the first and then second one and are then asked whether the equations are correct If they are the program calculates x' for both equations

After quadratic equations are explained you are requested to enter the coefficients of x^2' and x and the constant term The computer shows results

For people needing a machine to calculate those problems, a great program Otherwise of little value **T W**

instructions	65%
ease of use	60%
display	55%
value for money	60%

★ ★ ★

Complete Machine Code Tutor 32K BBC £14.95

New Generation, Bath Avon

If the thought of programming in machine code causes you to break into a cold sweat then this package, consisting of two cassettes and a slim booklet, could be for you

The package comprises 23 lessons most of which have an accompanying exercise Each lesson is selected from a menu and consists of one or more screens of text explaining the principles behind that lesson's topic The lessons cover subjects ranging from an explanation of the 6502's registers to the action of each of the mnemonics supported by 6502 assembly language

Lessons are illustrated with demonstration programs which are executed stepwise while current contents of each register and flag status is displayed A line of text explains what is happening in each step

Another excellent feature is the fact that it is completely interactive You can edit any of the example programs and re run them to see the effects of his alterations

During the few hours I have used this package I have learned more than I did in several days of grappling with books on the subject **J R**

instructions	60%
ease of use	90%
graphics	90%
value for money	90%

★ ★ ★ ★ ★

Maths Utilities Pack 2 (Vols 3 & 6) Spectrum £3.50

Solway, 6 Curzon St Maryport
Cumbria CA15 6LL

A non teaching program which calculates solutions for triangles and regular polygons (Vol 3) To calculate the lengths of a triangle's sides, its area and size of each angle you must input information in one of five ways — lengths of all sides, two sides and included angle, two angles and a side, an angle side and angle and with a right-angled triangle the length of the hypotenuse and another side There is an option for random triangles — which asks you to input a guess with no facility to enter it — and gives solutions as before to computer generated figures

Inputting the number of sides (up to 10,000+!) and either the length of side or centre to vertex length results in the calculation of area, internal and external angle

The contents of Volume 6 are numerical integration (also in Pack 3) change of base and circular geometry In the first, the integrand, number of intervals, upper and lower limits of integration are entered followed by the solution Useful to programmers change of base is from bases 2 to 9 and 16

The last option calculates remaining parameters from angle subtended at centre radius chord length, segment length and sector area **T W**

instructions	70%
ease of use	60%
display	45%
value for money	55%

★ ★ ★

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